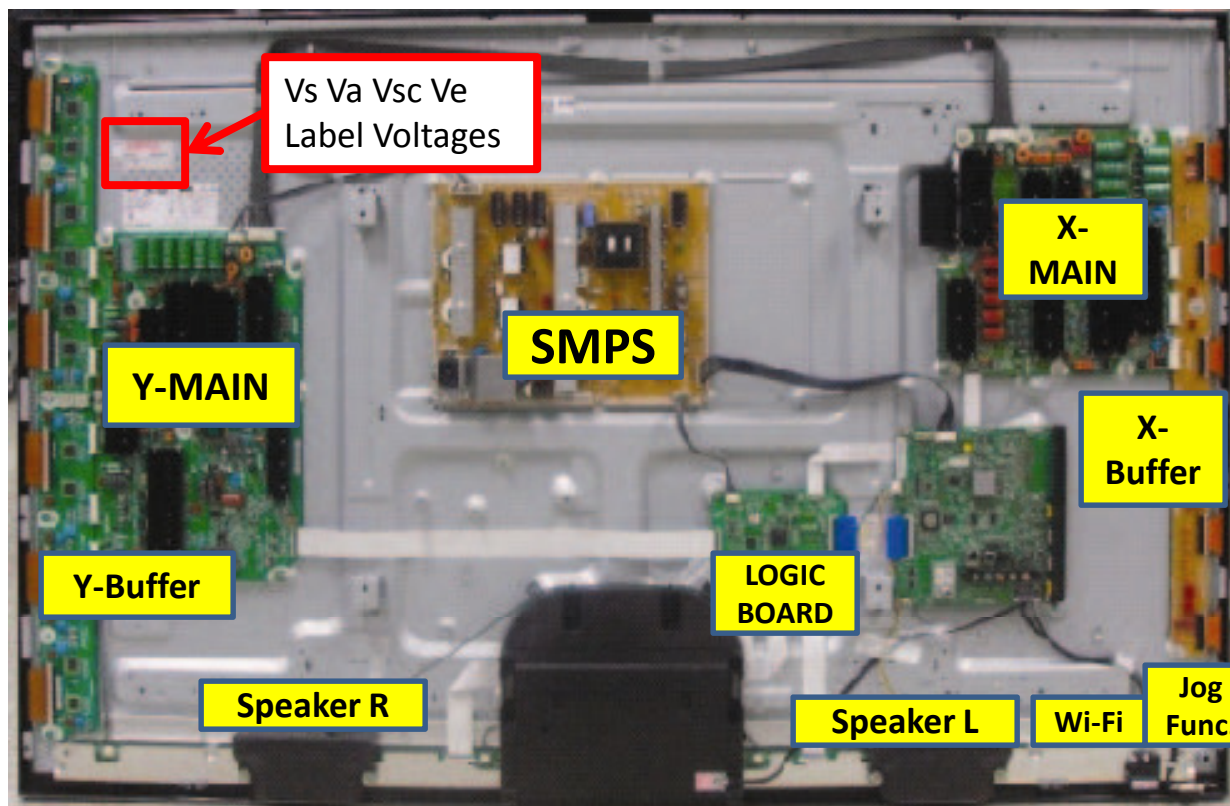




<http://gspn3.samsungsportal.com>

PLUS ONE

<http://my.plus1solutions.net/clientPortals/samsung>

HOT TIPS

-New 2012 Model... always check for latest bulletins and firmware updates.

6/15/12 T-MST10PAUSC Version 1015.0

- Resolves movie issue on VUDU
- Compatibility with DLNA devices
- Improves picture quality
- Supports Samsung Wireless Audio Dock
- Solves problem with Closed Caption

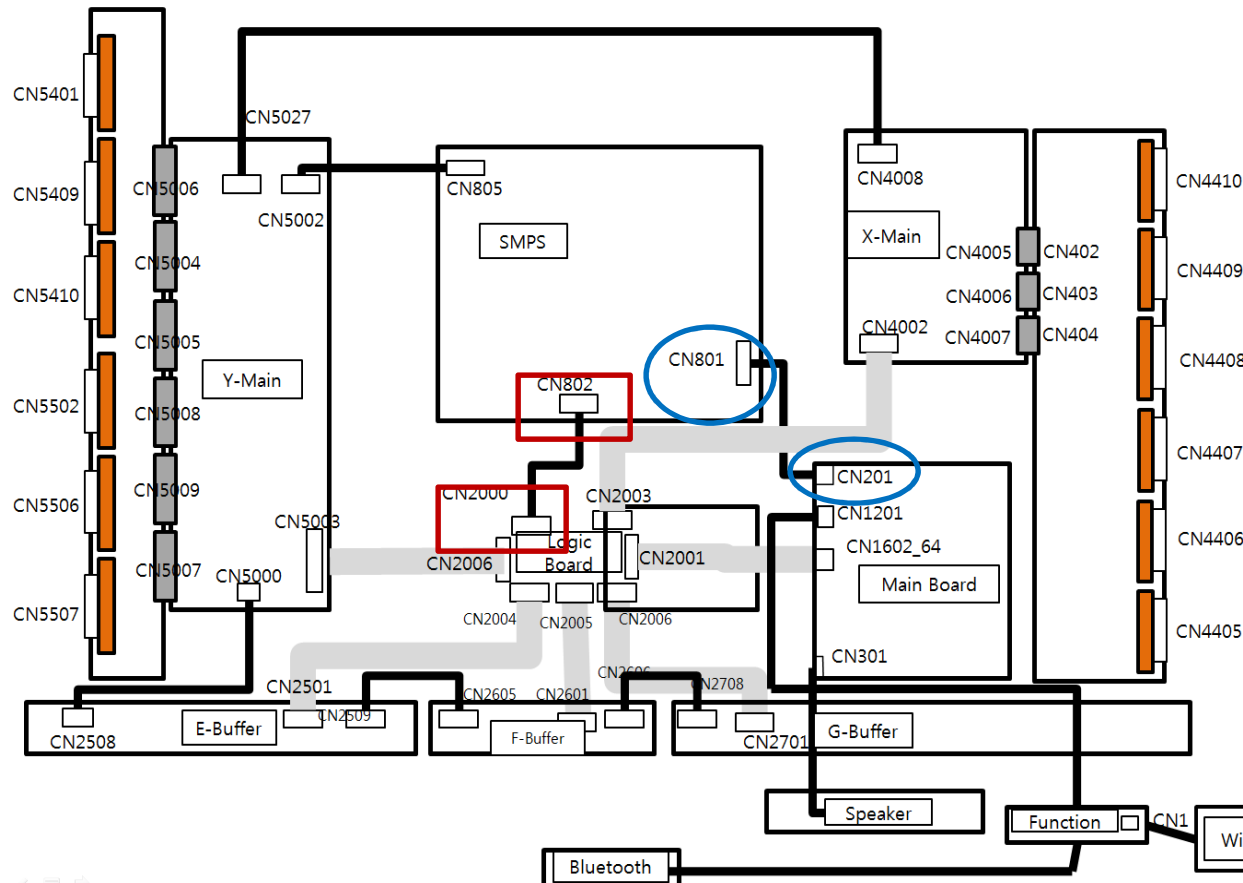
Avail on GSPN or Samsung,Com

Always check for latest updates

SERVICE BULLETINS

- 6/6/12 ASC20120606001: Improve Eco Sensor, replace Function Board & Upgrade Firmware
- 5/15/12 ASC20120515001: How to send TV's emergency data WD & AR data to SEA
- **Quick Parts: Verify before Ordering**

1	TW02	BN44-00515A	SMPS
2	TW02	BN94-04644F	Main PCB
3	TW02	BN96-21431C	RF module PCB
4	TW02	BN96-21749D	Function PCB
5	TW02	BN96-22025A	Logic Main PCB
6	TW02	BN96-22026A	Buffer E
7	TW02	BN96-22027A	Buffer F
8	TW02	BN96-22028A	Buffer G
9	TW02	BN96-22029A	X Main
10	TW02	BN96-22030A	Y Main
11	TW02	BN96-22031A	Buffer X
12	TW02	BN96-22032A	Buffer Y Up
13	TW02	BN96-22033A	Buffer Y Down
14	TW02	BN96-22041A	Panel
15	TW02	BN96-16795A	Stand Base
16	TW02	BN96-18641A	Stand Guide Neck
17	TW02	BN96-21996A	Front Cover
18	TW02	BN96-22002A	Rear Cover
19	TW02	BN96-22004A	Stand Guide
20	TW02	3903-000552	Power Cord
21	TW02	AA59-00579A	Remote
22	TW02	BN96-21672C	Speaker
23	TW02	BN96-22728A	LVDS Cable
24	TW02	4301-000103	Battery
25	TW02	BN63-02368B	Cleaning Cloth



CN801(SMPS) - CN201(MAIN)

Pin No.	Signal
1	PS_ON
2	STBY
3	GND
4	15V
5	GND
6	GND
7	D5.3V
8	D5.3V
9	GND
10	15V
11	15V
12	D5.3V

CN802(SMPS) - CN2000(LOGIC)

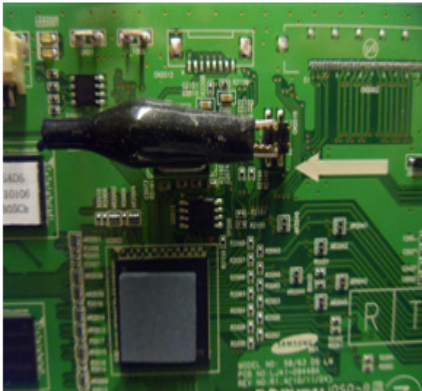
Pin No.	Signal
1	D5.3V
2	D5.3V
3	GND
4	VS_CON
5	PS_ON
6	VS_ON

Power On Sequence

- STBY 5V** (Pin 2 CN801)
- PS_ON** (approx 3.3V – 0V) (Pin 1 CN801)
- Low Voltages On** 5.3V & 15V (Voltage Signals listed in Charts)
- VS_ON** (approx 0V – 3.3V) (Pin 6 CN802)
(Power Supply sends Vs to Y & X Boards, & Va to Logic Buffer Boards.)
- TV on with **Boot Logo** appearing.

Activating Power & Logic Board Test Patterns without Main Board:

1. Remove Power Cord to Panel
2. Short Highest 2 Pin #s on Logic Board Test Jig (Can be 4 Pin or 6 Pin)



3. Remove Power Connector at Main Board (keeping connection to SMPS)
4. Short "Power On" Pin to Circuit Ground on Power Connector to SMPS.
5. Connect Power Cord to Panel



Power Supply Trouble Shooting Notes:

2010/2011/2012 models

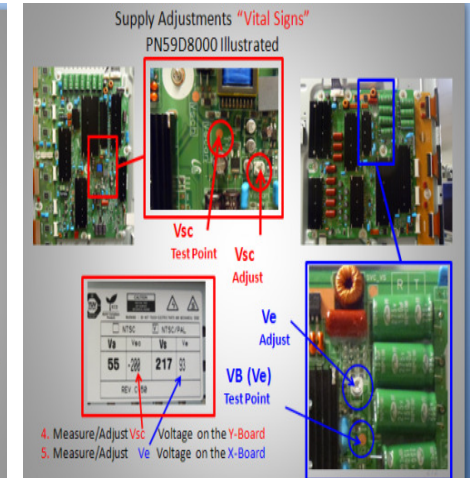
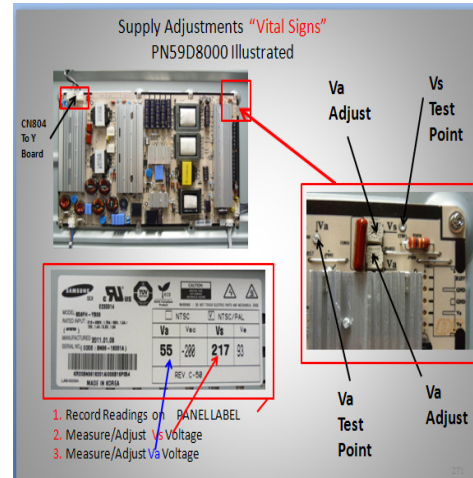
Will not be run with the "X" or "Y" main disconnected. The SMPS will shut down immediately. However if a meter is first connected to the test point when power is applied it will read the correct voltage briefly before shutting down. (You have enough time to check key voltages)

CAUTION: Do not reconnect any connectors to SMPS or Y/X Boards until power has been turned off long enough for Vs to drop below 10V or damage will occur to X or Y Boards.

Over Current Protection

For the SMPS Power Supply... If a short circuit occurs on either the VS or VA voltage lines, the SMPS stops operating, but should not fail. When the short circuit is removed from the source line, the Power Supply will operate normally again. **Many SMPS Supplies are replaced needlessly!**

Fast Track Troubleshooting Manual



SAMPLE VIEW & READINGS

VITAL SIGNS check Vs, Va, Vsc & Ve

When troubleshooting, It's very important to first check **Vs, Va, Vsc & Ve**. If **Vs** is missing (0V), disconnect power and check for short. Use ohm meter to measure resistance while disconnecting Y-Board & X-Board supply feeds one at a time.

Turn Power On and Test SMPS with short connector removed for correct Vs voltage verification. (It may only come up briefly but to full level). Again be careful not to reconnect Power Connectors until Vs falls below 10V.

If **Va** is low or missing, disconnect Supply Feed to Address Boards and Check to see if SMPS Supply is restored. (Note Va feed normally passes through the Y-Drive to the Address Boards (Logic Buffer Boards)).

If **Vsc** is low or missing and Vs was OK, the failure is with the **Y-Board** since the Y-Board generate the Vsc voltage from the Vs supplied by the SMPS.

If **Ve** is low or missing and Vs is OK, the failure is with the **X-Board** since the Ve is generated by the X-Board from the Vs supplied by the SMPS. Please note in some rare cases the Ve may be generated by the Y-Board feed to the X-Board.)

Other SMPS Voltages:

Check Low Voltage feeds to the Main Board and other supplied Assemblies.

Function Control Troubleshooting

- ✓ Standby **A3.3V** on Function Connector, Pin 3.

- ✓ All Pins should read **3.3V** before commands.

- ✓ **Press**, at Key 1, Pin 6. 3.3V to 0.0V DC

- ✓ **Left, Right, Up, Down** at Key 2, Pin 7. Check **specific voltages** on chart.

5 Directional Function Control

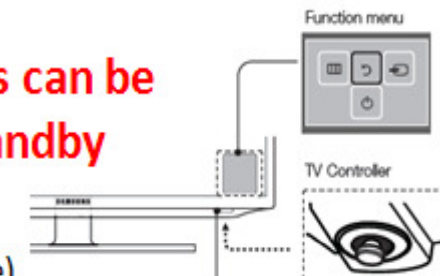
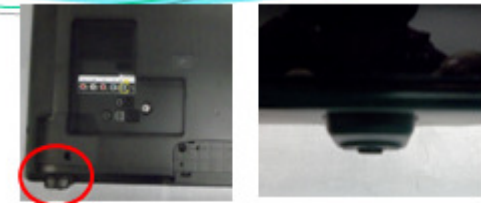
UNEH4000 Sample



CN702 (FUNCTION)			
1	IR	5	MSDA
2	GND	6	KEY1
3	A3.3V	7	KEY2
4	MSCL	8	GND

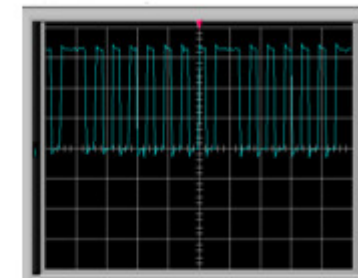
All Functions can be Tested in Standby Mode

(Standby Voltage)



Command	PIN	Signal	DC Voltage/Notes
IR	1	IR	3.3V to 2.5V DC with any Remote Control Commands
Press	6	Key 1	3.3V to 0.0V DC
Left	7	Key 2	3.3V to 1.6V DC
Right	7	Key 2	3.3V to 2.5V DC
Up	7	Key 2	3.3V to 0.0V DC
Down	7	Key 2	3.3V to 0.8V DC

Actual IR Signal



4V P-P Data

TROUBLESHOOTING VIDEO PROBLEMS

1. Verify Video Operation:

- Customer Picture Test
- "Display"
- If display & Customer Picture Test are OK source is suspected
- Substitute with known good source and cabling.

2. Using Test Patterns in Service Mode:

Customer Remote

- Power off
- Mute, 182, Power

Factory Remote:

- Power On
- Info, Test

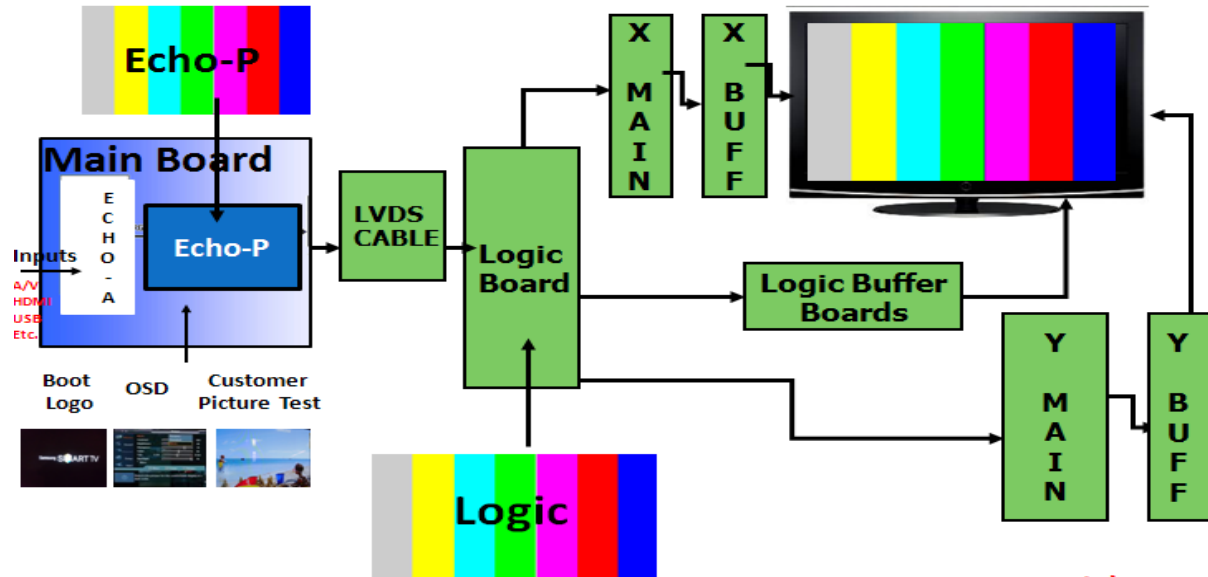
3. Verify Echo-P Patterns

4. Verify Logic Patterns

If Logic Patterns are OK and Echo-P are noisy, replace the defective LVDS Cable or Main Board.

If Echo-P and Logic Patterns are both noisy check for specific on screen noise error to determine failure. (next slide)

2012 PDP Signal Path for Troubleshooting



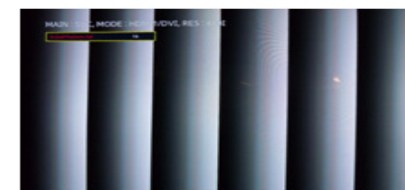
(PNXXE8000 Sample)

LOGIC Pattern Sel	13
LOGIC Level Sel	255
EchoP Pattern Sel	0
Echo-FP Pre Test Pattern	0
Echo-FP Post Test Pattern	0

Main Board Patterns Test
Select: EchoP Pattern Sel

LOGIC Pattern Sel	13
LOGIC Level Sel	255
EchoP Pattern Sel	0

Logic Board Patterns Test
Select: LOGIC Pattern Sel



Fast Track Troubleshooting Manual



ON SCREEN FAILURE EXAMPLES:

NOTE: X/Y MAIN Combined.

"Y" Board Failure Examples

Notice how each error contains a horizontal line

These examples show Y board errors, because the Y electrodes run horizontally, errors can often be seen across the screen.

2010 & 2011 Y board errors will be detected by the Logic Board and often create a High Voltage Power Down ("VS ON" to Off) condition.

When failure exists on either the Y-Board or the Y-Buffer Boards, be sure to replace both assemblies. A failure on either Board can create a failure on both assemblies.

Y Buffer Boards Failures

Y-Buffer Failures will often show blown Scan ICs & will create either Panel Power Down

Or

On Screen Errors across the screen as Shown in examples

Two Output Lines on Scan IC Are open or connector to Panel is open.

Bottom 2 Scan ICs affected. (12 ICs total = 1/6 of video)

"X" board Failure Examples

- In this left screen example, the sustain signal from the X board is low or missing.
- For 2009 Models and Older: Verify operation of the X board by disconnecting the power supply cable to the X board. If the other boards are working the picture will be dark.
- If the X-Board Power or Y-Board Power is removed, however, on 2010 or 2011 Models, an error will be detected and the VS Supply from the SHIPS will be turned off by the Logic Board. A Black Screen (on right) will occur.

"X" board Failure Examples

4:3 pillar bar shadow

4:3 pillar bar shadow

- In this example the Ve initialize signal is low or missing creating image retention. No Erasing.
- Troubleshoot the X Board by verifying that the Ve Voltage is correct with the label on the Panel.

Logic Board Failure Examples

Screen vertical Noise Errors usually in Multiple Locations

The examples show the panel illuminated but displays with incorrect noisy video.

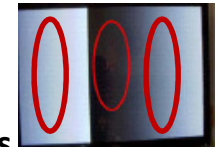
Logic Buffer Board Failure Examples

Main Board Failure Symptoms

- Main Board errors are similar to logic errors but the problem can be on a single source such as the tuner.
- If the Menu also shows the defect the main board is suspected

ALIGNMENTS:

1. Check/Adj. VS, VA, VE, & VSC according to Panel Label and Diffusion test. (see bulletins for any special notes before making changes)



DIFFUSION TEST/ADJ. (cell miss-firing)

- Allow the unit to warm up 15 to 20 minutes
- Access the Burn Protect Sig. Pattern in Cust. Menu.
- Adjust the Vs volts until screen errors are gone in both dark and bright areas.
- Adjust the Vs volts within +/- 10V on the panel label.
- **NOTE: Diffusion may appear with aging panels.**
- **New panels with Diffusion consult bulletins and/or report problem.**

2. Check/Set Option Bytes: (Complete Tables in Tips)

Model Code	Type	Basic Model	SVC Model	Option				
				Tuner	Region	Ch Table	Front Color	Local Set
PN64E550D1FXZA	64ESHcD	PE550D	PE550D	-	-	SAMEX	P-T-C-BK	US
PN64E550D1FXZA	64ESHcD	PE550D	PE550D	-	-	SAMEX	P-T-C-BK	US